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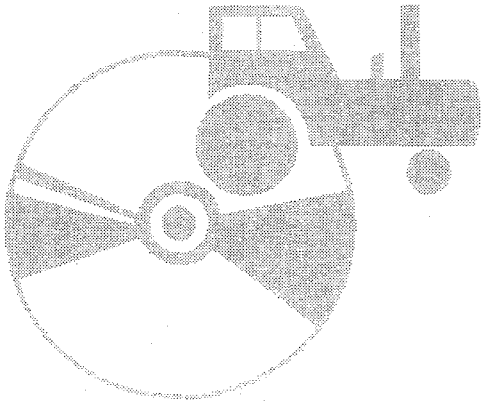
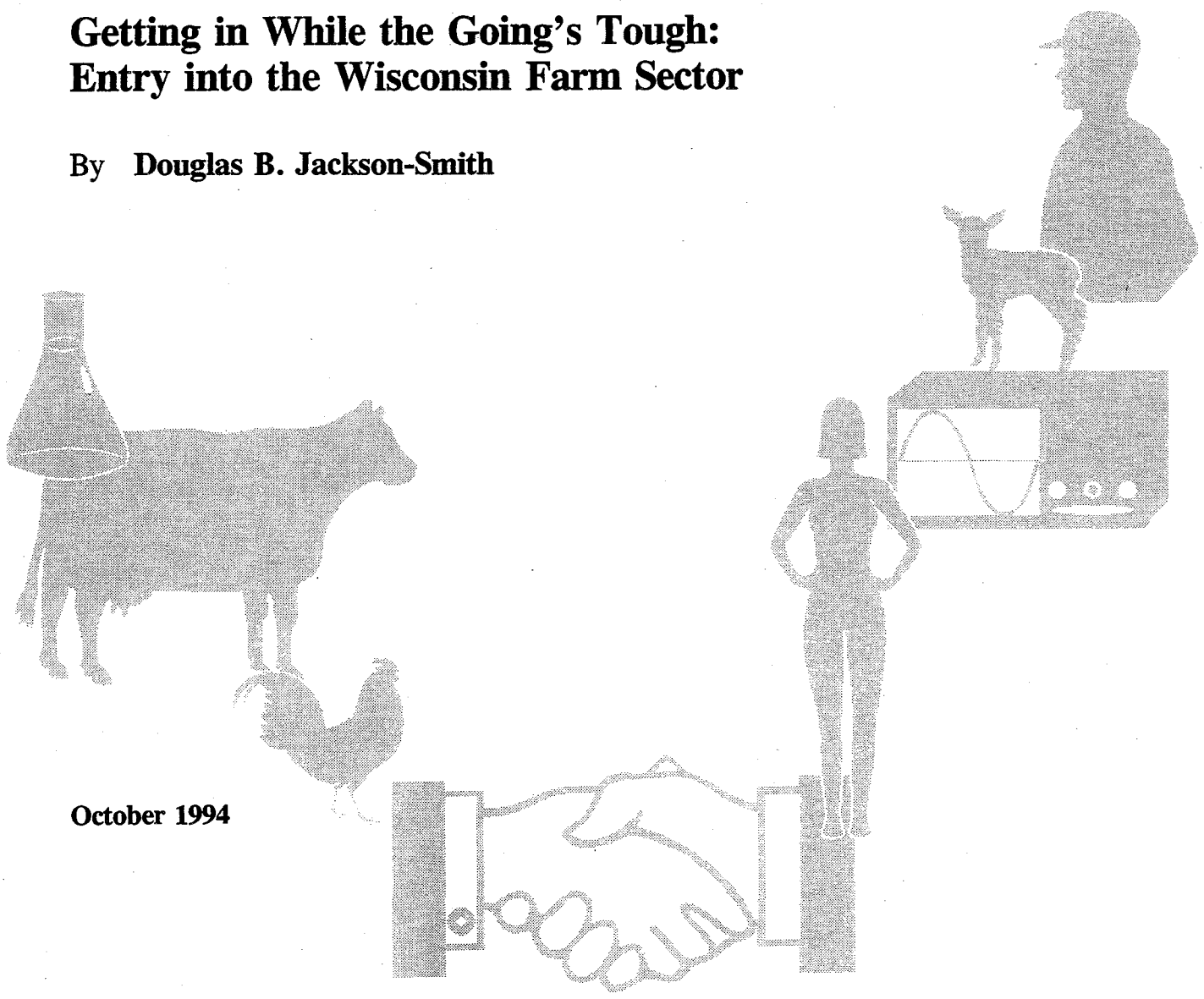


Getting in While the Going's Tough: Entry into the Wisconsin Farm Sector

By **Douglas B. Jackson-Smith**



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Getting in While the Going's Tough: Entry into the Wisconsin Farm Sector[1]

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Introduction

In recent years, there has been growing public attention to an apparent decline in the rate at which young people have been entering the Wisconsin farm sector. Interest in farm entry arises from a public policy concern that if too few young people enter farming in the coming decade, the viability of the Wisconsin farm sector in general, and the dairy industry in particular, could be threatened. A number of public and private initiatives to assist beginning farmers have been proposed, and a few programs--including subsidized loans and planning for a computerized land-link system to match entering and exiting farmers--were initiated in the first half of 1994 by various agencies of the state government.

Despite considerable interest in helping young people enter farming in Wisconsin, there is little empirical information about the actual entry process new farm operators go through as they work to acquire farm assets and develop a new farm enterprise. While the so-called farm crisis of the mid-1980s generated a great deal of research on the characteristics of farmers who left farming, there has been very little research on the characteristics of those who were getting in.

This paper presents some results of an extensive survey of Wisconsin farm operators conducted by the Agricultural Technology and Family Farm Institute in the spring of 1993.[3] In the first section, information about the typical entry process for Wisconsin farm operators is discussed. The second section examines the significance of farm background, family farmland, and other family resources for entry into farming. The remainder of the paper is devoted to examining the characteristics of farm operators who have become principal farm operators in the last 20 years. Particular emphasis is placed on farm operators who entered between 1988 and 1992.

An understanding of the entry process and the characteristics of recent entrants can be important in several ways. Although times were tough during the mid- and late-1980s for the average Wisconsin farmer, thousands of new farm operators were successful in getting into farming, and lessons can be learned from their experiences that could assist others interested in becoming farmers. Moreover, the design of public programs to facilitate farm entry should be informed about the kinds of entry paths and farm acquisition strategies that are currently used by successful entrants. It is hoped that this report can take significant steps towards filling these information needs.

Trends in Entry and Exit in Wisconsin Agriculture

After relatively profitable and stable years during the 1970s and early 1980s, Wisconsin witnessed an increased rate of net decline in farm numbers during the 1980s and into the early 1990s.[4] Recent analysis of data from the Census of Agriculture suggests that the *net* declines in farm numbers are actually comprised of much larger *gross* flows into and out of the farm sector. For example, the net decline from 75,000 farms in 1987 to 68,000 farms in 1992 in Wisconsin consisted of roughly 18,000 farms exiting and another 11,000 farms entering the sector (Gale, 1994b).

This research also found that the annual *rate of entry* dropped significantly during the 1980s and early 1990s as compared to the 1978-1982 period.[5] In fact, the rapid decline in the numbers of farmers going into farming accounted for most of the increase in the *rate of net decline* observed during the 1980s. Entry rates declined in Wisconsin during this period faster than in any other state in the nation (Gale and Henderson, 1991; Gale, 1994a and 1994b). Anecdotal evidence from public hearings and from focus group meetings with a cross-section of the Wisconsin farm community (ATFFI, 1993; Lezberg, 1994b) and recent studies of entry and exit rates among dairy farmers (Cross, 1992a, 1992b, 1992c, 1994) suggest that the "problem" of low rates of farm entry has persisted into the 1990s.

As the rate of new entry has slowed, older farmers find themselves less able to sell their farms and retire. Increasingly, farmers are hanging on a few more years in the hope that conditions in the farm sector will turn around so that they can sell their farms at a price that would enable them to retire. One indication is the fact that the percentage of farm operators over 65 years of age increased from 13 percent in 1982 to 19 percent in 1992 (Bureau of Census, 1994). Moreover, in a 1994 survey of dairy farm operators, 87 percent agreed with the statement that "many older farmers in Wisconsin today cannot afford to retire, and they wind up farming longer than they would like."

It is not readily apparent, however, why rates of entry have dropped. Gale (1993) suggests that several factors combined to account for the low rates of entry between 1982-1987. These include:

(a) low returns to farming;
(b) the attraction of higher nonfarm wage rates and off-farm work opportunities, and;
(c) historically high land prices and restrictive credit policies during the early 1980s.

A report by the U.S. General Accounting Office (1993) suggests that low profit levels in farming, credit barriers, and problems with federal programs designed to assist beginning farmers help account for the decline in the numbers of new farmers. In addition, since 80 to 90 percent of current farmers grew up on farms, a declining pool of farm-reared males has also been cited as a demographic constraint on the number of new farm entrants (Gale, 1993; but see Tweeten and Zulauf, 1994, for a contrasting point of view).

A number of approaches to address the problem of low rates of entry have been proposed, the most notable being a package of initiatives developed by the Wisconsin Entry-Exit Coalition, which consists of bankers, farm organizations, university researchers, and state agencies with an interest in facilitating farm entry (Lezberg, 1994a). In the spring of 1994, the Wisconsin State Legislature authorized bonding authority for the Wisconsin Housing and Economic Development Authority (WHEDA) to offer subsidized interest rates for loans to beginning farmers. Meanwhile, staff at the Wisconsin Department of Agriculture, Trade, and Consumer Protection have proposed to develop an initial computerized data base to match beginning and retiring farmers. Together with others from the Entry-Exit Coalition, DATCP staff have begun to develop information manuals and training workshops that could assist both entering and exiting farmers negotiate farm transfers.

Background to the Survey Data

This report presents data from a survey of almost 900 Wisconsin farm operators conducted in the spring of 1993. The survey was targeted at a random sample of Wisconsin farm operators obtained from a list maintained by the Wisconsin Agricultural Statistics Service (WASS) in the Department of Agriculture, Trade, and Consumer Protection. All interviews were done face-to-face by trained enumerators familiar with the

local area. A total of 873 usable questionnaires were obtained, yielding just over a 70 percent response rate.[6]

The survey instrument was designed to provide broad baseline information about the structure of farming in Wisconsin, the financial status of Wisconsin farm enterprises, and the use of various technologies and farm practices on Wisconsin farms. In addition, the survey included extensive sections about each respondent's farm background, their occupational work histories, and the extent of family assistance in their entry into the farm sector. These latter items provide the focus for the current research.

Definitions of Entry

The point at which one has "entered" farming is usually thought of an obvious, discreet event that should be relatively simple to determine. For example, most survey research has utilized questions similar to the following:

> *How many years have you been farming?*
>
> *When did you first enter farming?*
>
> *In what year did the operator begin to operate any part of this place?*[7]
>
> *How long have you been on this current farm?*

In practice there are many different entry paths into production agriculture, and it is somewhat arbitrary to identify a particular experience as the point of entry. As we shall see, most farm operators in Wisconsin grew up on farms and worked in some capacity on a relative's or other person's farm before becoming a principal operator themselves. Moreover, it is not uncommon for farm operators to have been the principal operator on several different farms. If the same individual farm operator were asked all four questions listed above, they would be likely to give very different answers (resulting in different estimates of the date of entry).

Rather than see this complexity as a source of frustration, the 1993 survey was designed to measure the timing of a wide range of farming experiences. In particular, each respondent was asked about all work experiences he or she had (in a farm or nonfarm job) since leaving school. For all farm work jobs, each respondent was asked five questions that were then used to classify each separate farm work experience. Two of these questions--whether the person had owned any of the assets on that farm, and whether he or she was responsible for making most important farm management decisions--were used to classify farm work experiences into four main types. These farm work experience types are listed in Figure 1 below.

In the analysis that follows, "entry" is defined as the first incidence of a principal-operator-type experience. Since the sample was drawn from a list of presumed "principal farm operators," it was possible to identify an entry date for virtually every case in the sample.[8]

In addition to the section on occupational histories, the survey also gathered information about the respondent's "first farm." Specifically, a number of questions were asked about the "farm you were on when you first tried to support yourself at least in part through farming, and on which you made farm management decisions." Respondents were asked about a number of characteristics of their first farm (size, tenure, and enterprise type), as well as the age and off-farm work experience of the respondent when he or she first started work on their first farm. Detailed questions about how the first farm was acquired were included in the interview instrument.

FIGURE 1
Typology of Farm Work Experiences

CRITERIA:		Did they make most decisions? (MANAGERIAL AUTHORITY)	
		NO	YES
Did they own any assets? (RISK ASSUMPTION)	NO	Employees	Hired Managers
	YES	Junior Operators	Principal Operators

It should be pointed out that for some individuals, this first farm was the same farm on which he or she first became a principal operator, and perhaps the same farm they were still operating in 1992. For others, it was a farm on which they may have participated in the farm work, yet on which they were not the principal decision maker. Enumerators were explicitly instructed not to include work as a hired hand (with no asset ownership or managerial authority) in this section.

Methodological Considerations

The use of cross-sectional data to investigate questions related to entry into farming has certain inherent limitations that need to be recognized when interpreting the results. First, one must keep in mind what can be referred to as the "survivor effect." In essence, the population of farmers at any given point in time is not a random sample of farmers who have entered farming in the past, particularly when one is interested in people who entered more than 5 to 10 years ago. Because of the high rates of entry and exit that characterize farming as a sector, a relatively small proportion of entrants at any given point in time will still be in business 20 to 30 years later. To the degree that the probability of survival is not randomly distributed across the population of entrants, the characteristics of survivors may not always reflect the characteristics of the average entrant 10, 20, or 30 years ago, and the survivor-effect bias is stronger the farther back in time one goes.

Second, there is also a related bias that comes from the difficulty in identifying very recent entrants into farming--which can be referred to as a "list-sampling effect." Any list-based sampling frame will typically underrepresent the most recent farm entrants because there are few mechanisms to systematically identify and contact new farmers. The list used for this sample is thought to have a very good sample of *dairy* farmers since the list is updated annually with the records from the state Brucellosis Ring Test (BRT), which is required of all dairy farmers to obtain a license to sell milk. For other farmers, however, there are no equivalent lists to ensure that new entrants are quickly identified and included on the list. As a result, the sample frame used here may underrepresent the total population of recent entrants, and be biased towards dairy farmers

and towards farmers who have been able to survive long enough to be recognized and be placed on the list.

The list effect probably serves to counterbalance the survivor effect to some degree in our sample. This is because a large fraction of new entrants do not survive more than a few years (see LaRamee, 1989), and may not ever get onto the list used for sampling. As a result, the data for the most recent entry cohorts may actually reflect survivors to a greater degree than otherwise expected. This makes their characteristics more directly comparable with the data for earlier entry cohorts. Moreover, because the highest rates of entry and exit have been seen among the smallest farm size classes (LaRamee, 1989; Ehrensaft et al., 1985), and because the present sample tends to underrepresent these kinds of farms, it is likely that the results discussed below present a reasonable approximation of the characteristics of the moderate- to large-sized entrants into Wisconsin agriculture in recent years while undercounting many of the smaller, part-time and hobby farms in the state.

In order to ascertain the characteristics of recent entrants, many of the tables that follow divide the sample into entry cohorts based on the year each respondent first became a principal operator on any farm. Because of the biases associated with the survivor effect, the presentation of data is confined to entrants since 1973 (about 40 percent of the sample), since the data for this cohort should be particularly accurate. The discussion mainly focuses on the most recent entry cohort (1988 to 1992). Given the discussion above, however, care must be taken when comparing the characteristics across different entry cohorts.

Results

The reader should note that in this section, the initial results are presented for the sample as a whole. In the second half of the discussion of results, the focus is on the most recent entrants, and how their characteristics differ from the rest of the sample.

Entry Into the Wisconsin Farm Sector

When one looks at Wisconsin farm operators in 1992 as a whole, it is apparent that most farm operators had their first post-schooling farm work experiences in their early 20s. The average age of operators when they first supported themselves at least in part through farming was 23 years old, with almost two-thirds of the sample having been less than 25 years old when they started on their first farm. However, the typical Wisconsin farm operator did not become a *principal operator* until he or she was 28 years old, and less than 40 percent of them did so before the age of 25. Seventeen percent of respondents became principal operators after the age of 45, indicating that it is not rare for individuals to wait until mid-life to assume full responsibility for running the farm.

Table 1 reports information about how many respondents had other kinds of farm work experience prior to their having become a principal operator. It is immediately apparent that about half of Wisconsin farm operators entered farming directly as a principal operator, without prior work as a junior operator, hired manager, or farm employee.

Table 2 presents information about the nature of the farm work experiences for those who did have some kind of prior farm work experience. Forty-four percent of the respondents had prior (i.e., non-principal operator) work experience on a relative's farm, and only 9 percent had prior work experience on the farm of an unrelated person. The most common type of non-

TABLE 1
Farm Work Experiences Occuring Prior to Principal Operatorship

	Percent of Entire Sample
Entered directly as principal operator without prior farmwork experience	47.1
Had other farm work experience first	52.9
(total)	100.0

TABLE 2
Types of Farm Work Experiences Among Respondents With Experience Prior to Principal Operatorship

	Percent of Respondents with Prior Farm Work Experience
Type of farm on which experience occurred	
Worked on a relative's farm	82.5
Worked on a non-relative's farm	17.5
(total)	100.0
Type of farm work experience	
Worked as a junior operator	20.2
Worked as a hired manager	14.2
Worked as a farm employee	74.1

Notes: These three categories are not mutually exclusive, since a single operator may have had combinations of these experiences prior to becoming a principal operator; hence, they do not add up to 100 percent.

principal-operator farm work experience was as an employee, where the person neither owned any of the significant farm assets nor made the important farm management decisions. Just under two out of five respondents reported working as a farm employee before becoming a principal operator. Eleven percent of the respondents had worked as a junior operator and 8 percent had been employed as a hired manager.

Significance of Family Farm Background and Resources

The survey results support the conventional notion that farming tends to be a relatively closed occupation, in which very few persons from urban backgrounds are successful in becoming farm operators (see also Lancelle and Rodefeld, 1980; Lyson, 1984; Kloppenburg and Geisler, 1985). The vast majority of sample respondents had grown up on a farm (see Table 3). Over 90 percent of respondents had parents who farmed, and roughly two-thirds of their spouses' parents farmed. When taken together, only 4 percent of the farm households in the sample did not have at least one adult who grew up on a farm.

Because the predominant form of Wisconsin agricultural production is the family labor farm, and in part due to the popular mythology of the family farm, many assume that the vast majority of farmers are working on the same farm as their ancestors (or at least their parents) did. In fact, while most farm operators do have parents who own (or owned) farmland, just over half of all Wisconsin farm operators had actually acquired farmland from either their or their spouse's parents by 1992. The data in Table 4 suggest that an additional 10 percent of the sample respondents had an *opportunity* to acquire parental farmland yet did not do so. Approximately a third of the respondents reported that their parents had owned farmland, but that they had not had the opportunity to acquire any of that farmland. This may be because their parents were still operating farmland or because their parents did not make an effort to transfer their farmland to their children. Only about 5 percent of respondents had parents who had never owned any farmland.

A different measure of the significance of family land is seen in the average proportion of owned and rented land that is obtained through relatives. The data in Table 5 indicate that, on average, just over half of all owned land was either purchased from a relative, inherited, or given to the respondent. Another 49 percent of the owned land was purchased from an unrelated person. In contrast, the vast majority of rented acreage came from non-relatives. Only 29 percent of all rented farmland, on average, was owned by a relative of the respondent.

Comparisons of Recent Entry Cohorts

Using the information about the year in which each respondent first became a principal operator, the sample was divided into a series of entry cohorts based on 5-year intervals. The distribution of Wisconsin farm operators by entry cohort is illustrated in Figure 2 below. The four most recent cohorts (from 1973-1977, 1978-1982, 1983-1987, and 1988-1992) are considered in the next section to reflect the general characteristics of entrants into Wisconsin agriculture over the last 20 years.

The four most recent entry cohorts represent 349 operators, roughly 40 percent of the entire sample of Wisconsin farm operators. It is somewhat surprising that the two most recent cohorts are smaller than the cohorts that entered 10 to 20 years earlier. While this decline in cohort size is likely a direct reflection of the drop in entry rates in Wisconsin agriculture over the last 10 to 15 years, it occurs despite the fact that more recent cohorts have had less time to "fall out" compared to those starting out much earlier.

TABLE 3
Farm Background of Respondents and their Spouses

Family Farm Background	Percent of Sample
Respondent's parents operated a farm	92.4
Spouse's parents operated a farm	66.2
Either or both parents operated a farm	96.4

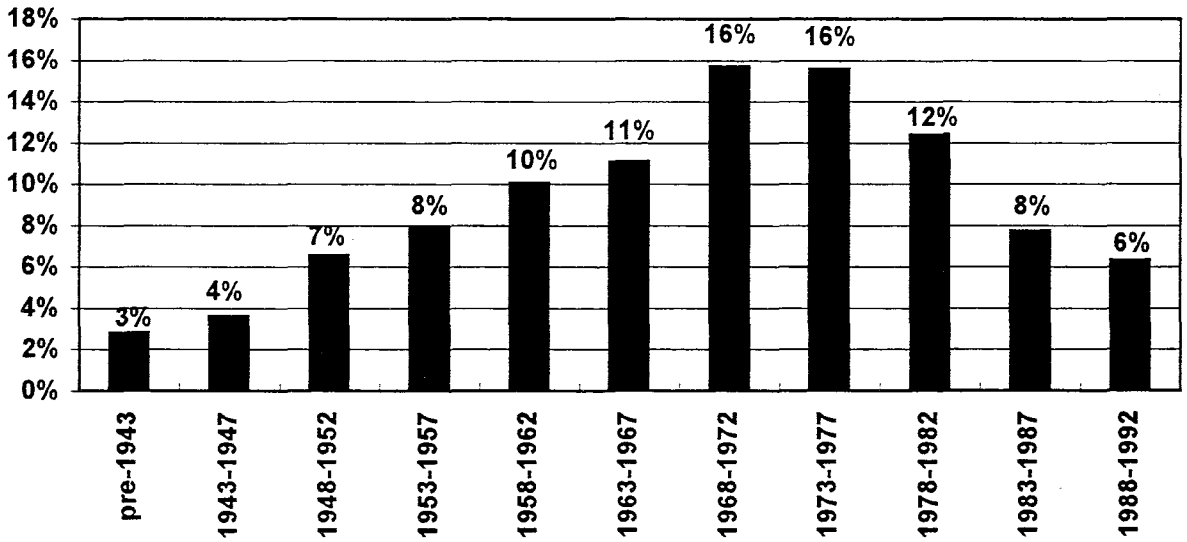
TABLE 4
Access to Parental Farmland

Access to Parental Farmland	Percent of Sample
Acquired farmland from either the operator's or spouse's parents	53.0
Had opportunity to acquire farmland from parents but chose not to do so	10.2
Parents had land, but they have not made it available to respondent yet	32.3
Parents never owned any farmland	4.5
(total)	100.0

TABLE 5
Sources for Owned and Rented Land on Wisconsin Farms, 1992

Sources of Owned and Rented Land	Percent of Acres
If respondent owned any land	
Mean percent of owned land inherited by or given to respondent	5.8
Mean percent of owned land purchased from a relative	45.4
Mean percent of owned land purchased from a non-relative	48.5
(total)	99.7
If respondent rented any land	
Mean percent of rented land owned by a relative	28.2
Mean percent of rented land owned by a non-relative	71.8
(total)	100.0

FIGURE 2
Percent of Farm Operators by Entry Cohort



Recalling the methodology discussion above, it is critical to recognize, however, that the older cohorts represent a sample of "survivors," and their characteristics may or may not reflect those of the entire populations of original entrants in their cohort. This bias is minimized by looking only at the most recent entry cohorts.

In the section that follows, comparisons are made between recent entrants and the sample as a whole. Initially, information about the "typical" entry process and access to family farmland is summarized for recent entry cohorts. The bulk of the section then describes some of the key "structural" characteristics of the recent entrants and compares them to some of the trends in aggregate farm structural change in Wisconsin.

Comparisons of recent entrants and the sample as a whole highlight some of the distinguishing characteristics of recent entrants, and help us understand how farms in the future may differ from those of today. Moreover, they suggest some of the kinds of adaptations new entrants may be making to new economic conditions facing the Wisconsin farm sector. This information can be useful in understanding how recent entrants actually started farming and in designing public policies to help beginning farmers.

It should be kept in mind, however, that some of the characteristics of new entrants may differ from those of more established farmers merely because of the fact that they are beginning a long process of asset accumulation, much as the rest of the population may have done when they entered in previous periods. Over time their farm enterprises likely will come to look more like those in the sample as a whole. Unfortunately, the cross-sectional nature of the present survey results makes it difficult to distinguish between differences that reflect fundamental changes in the underlying farm entry strategies of young people from those attributable to normal lifecyle processes. The results should be read with this qualification in mind.

Comparisons of the Entry Process

The data in Table 6 present some basic information for the four most recent "entry cohorts" about the age distribution of the 1992 farm operators broken down by the year they first became a principal operator. Roughly 14 percent of the sampled operators had become principal operators since 1982. Another 27 percent of the sample had entered between 1973-1982. As one would expect, the most recent entrants tend to be younger than earlier cohorts or than the farm operators in the rest of the sample. However, the differences in age appear to be moderated in the most recent entry cohorts. In fact, a greater proportion of the 1988-1992 entrants are currently over 45 years old than those who entered between 1983-1987, indicating that the average age for becoming a principal operator has increased substantially in recent years.

The hypothesis that recent entrants are generally beginning their farm careers at an older age than their counterparts who entered prior to 1988 is further supported by the data in Table 7 and Table 8. While there are few notable differences in the average age at which recent entrants had their first farm experience,[9] there does appear to have been a dramatic rise in the number of years between this first farming experience and the age at which recent entrants have assumed principal operator responsibilities. In fact, the average number of years between first farm experiences and principal operatorship nearly doubled (from 5 to 10 years) in the most recent entry cohort. While only 17 percent of all respondents became primary operators after the age of 35, and 19-22 percent of those entering between 1973-1987 were over 35 at the time of entry, nearly half (46 percent) of the most recent entrants became principal operators after the age of 35.

TABLE 6
Age Composition of Respondents
By Recent Entry Cohorts

Description of Sample	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Number in Sample	873	133	106	66	54
Percent of Respondents	100.0	15.6	12.4	7.7	6.3
Mean Age of Operator (years)	50.7	45.7	41.7	37.2	36.9
Distribution of Respondents by Age Class	(percent)	(percent)	(percent)	(percent)	(percent)
Under 25	0.4	0.0	0.0	1.6	3.8
25-34	9.3	1.2	16.1	42.2	43.4
35-44	25.4	51.5	57.3	42.2	37.3
45-54	25.9	36.8	14.4	7.8	10.9
55-64	23.5	4.6	8.9	6.2	2.6
65 +	15.5	5.9	3.3	0.0	2.0
(total)	100.0	100.0	100.0	100.0	100.0

The data in Table 9 indicate that recent entrants were much less likely to enter directly as a principal operator (30 percent) than the sample as a whole (53 percent). Table 10 presents information about the nature of the prior farm work experiences for those who had done any. Despite the increased incidence of prior non-principal-operator farm work experience among recent entrants, roughly similar proportions of all prior farm work was done on a relative's farm. In fact, the *proportion* of prior farm work experiences that were on a relative's (versus an unrelated person's) farm remained roughly equal across all entry cohorts (about 80 percent in all cases).

The most dramatic difference between the work experience of recent and past entrants is the much higher percentage of recent entrants who have worked as a junior operator before becoming a principal operator. Almost a quarter of the recent entrants had worked at one time as a junior operator. This is consistent with the fact that recent farm entrants are waiting longer before taking over principal operator responsibilities, preferring to gradually assume asset ownership and managerial responsibilities. In addition, it appears that the increased incidence of prior farm work has not consisted of an increase in work as a farm employee. Despite the fact that more operators are doing prior farm work, they are no more likely to have worked as a farm employee than have operators in the rest of the sample.

TABLE 7
Age of Respondents at Time of Their First Farm Experience
By Entry Cohorts

		Year First Became a Principal Operator			
	Overall Sample	1973-1977	1978-1982	1983-1987	1988-1992
Mean Age At First Farm Operator Experience	23	24.4	24.8	24.5	24.7
Distribution of Respondents By Age Classes	(percent)	(percent)	(percent)	(percent)	(percent)
Under 25	64.0	58.4	56.2	58.1	62.6
25-34	28.5	31.3	34.2	31.0	23.7
35-44	5.7	6.4	3.2	10.9	9.8
45 +	1.6	3.9	5.4	0.0	4.0
(total)	100.0	100.0	100.0	100.0	100.0

TABLE 8
Age of Respondents at time of First Principal Operator Experience
By Entry Cohorts

		Year First Became a Principal Operator			
	Overall Sample	1973-1977	1978-1982	1983-1987	1988-1992
Mean Age At First Principal Operator Experience	28.2	28.7	29.5	29.9	34.7
Distribution of Respondents By Age Classes	(percent)	(percent)	(percent)	(percent)	(percent)
Under 25	38.1	39.2	29.5	30.8	13.5
25 to 34	45.4	41.4	51.8	47.3	41.2
35 to 44	11.9	11.7	8.6	14.0	31.7
45 +	4.6	7.7	10.2	7.8	13.5
(total)	100.0	100.0	100.0	100.0	100.0

TABLE 9
Percent of Respondents with Farm Work Experience
Prior to Becoming a Principal Operator
By Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Entered as primary operator without prior farm work experience	47.1	58.1	40.5	46.4	29.9
Had other farm experience first	52.9	41.9	59.5	53.6	70.1
(total)	100.0	100.0	100.0	100.0	100.0

TABLE 10
Types of Farm Work Experiences Among Respondents
With Experience Prior to Principal Operatorship
By Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Type of farm on which experience occurred	(percent)	(percent)	(percent)	(percent)	(percent)
Worked on relative's farm	82.5	83.8	88.2	82.0	80.8
Worked on non-relative's farm	17.5	16.2	11.8	18.0	19.2
(total)	100.0	100.0	100.0	100.0	100.0
Type of farm work experience					
Worked as Junior Operator	20.2	15.8	19.3	37.2	31.8
Worked as Hired Manager	14.2	8.9	15.4	10.1	14.2
Worked as Farm Employee	74.1	75.3	65.3	52.6	53.9

Notes: These three categories are not mutually exclusive, since a single operator may have had combinations of these experiences prior to becoming a principal operator; hence, they do not add up to 100 percent.

Comparisons of the Significance of Family Farmland Resources

Recent farm entrants were no less likely than older entering cohorts to come from farming backgrounds. Roughly 96 percent of all entry cohort couples--including the most recent group--had either an operator or spouse's parent who had farmed. When looked at on an individual basis, a smaller percentage of the spouses of recent entrants had parents who had farmed (53 versus 66 percent), while the proportion of recent-entrant farm operators coming from a farm family was only slightly less than the sample average (88 versus 92 percent).

In addition, recent entrants were only slightly less likely than previous entry cohorts to have acquired farmland from their own or their spouse's parents (see Table 11). To some extent, the fact that there is not a larger difference is surprising, since recent entrants are younger on average than the sample as a whole and have had fewer years to obtain parental farmland. As in the sample as a whole, about a third of the most recent entrants had not been offered parental farmland by 1992, and another 8 percent had parents who had never owned any farmland.

Structural Characteristics of Recent Farm Entrants in Wisconsin

Characteristics of entrants can affect the direction of structural change in the farm sector insofar as they differ from those of earlier entry cohorts. The following section documents many of the ways in which the farm enterprises of recent entrants differ from (or are similar to) farm enterprises already in the sector. To the extent that entrants represent a departure from the norm, these differences may point to the direction future structural change may take.

Scale. Although the overall number of farms in the state has declined steadily since the 1930s, the Wisconsin farm sector has continued to be dominated by family farms--farms on which the majority of labor, assets, and managerial authority is provided by farm operators or members of their households. Nevertheless, the last few decades have witnessed significant changes in the size of farm operations and in the ways farm businesses are organized and family labor is utilized. In particular, the "average" acreage on a Wisconsin farm has increased over 40 percent--from 161 acres to 228 acres--between 1959 and 1992. Over the same period of time, the average gross farm sales per farm (in constant 1982 dollars) increased by 119 percent.[10] These average increases mask the emergence of a dualistic farm structure wherein the percent of farms in the lowest and highest sized categories has increased, and the percent of middle-sized farms has fallen (Buttel and LaRamee, 1991).

Tables 12 and 13 present information about the scale of farm operations for the population as a whole and among the four most recent entry cohorts. Table 12 reports information about the acreage on respondent farms. Table 13 presents data on the value of gross farm sales. The results suggest that the farms of the most recent entrants tend to be larger in terms of acreage, but smaller in terms of gross farm sales, than the "typical" Wisconsin farm in 1992. Interestingly, operators who entered between 1973 and 1987 tended to have smaller acreages than the sample as a whole, while the farms of the most recent cohort appear to be significantly larger than average. The higher average farm size for recent entrants is apparently the result of fewer farms entering at the smallest acreage classes, rather than a dramatic increase in the percentage of farms in the largest acreage classes.

The gross sales data in Table 13 reveal that members of the most recent entry cohort were less likely then the sample as a whole to have gross farm sales exceeding $100,000 in 1992. Moreover, while the mean gross farm sales figure is significantly smaller on the farms of the most recent entrants, the mean sales for each of the 1973-1987 entry cohorts

TABLE 11
Percent of Respondents with Access to Farmland From Operator's or Spouse's Parents By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Acquired farmland from either the operator's or spouse's parents	53.0	42.5	54.2	42.2	45.6
Had opportunity to acquire farmland from parents but chose not to do so	10.2	11.0	8.9	13.9	12.0
Parents had farmland, but they have not made it available to respondent	32.3	38.9	34.7	34.6	34.9
Parents never owned any farmland	4.5	7.7	2.2	9.4	7.6
(total)	100.0	100.1	100.0	100.1	100.1

TABLE 12
Acres of Farmland Operated in 1992 By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Mean Acres Operated	289.5	277.8	283.2	248.5	298.9
Distribution of Respondents by Size Classes	(percent)	(percent)	(percent)	(percent)	(percent)
1 to 49 acres	7.3	9.8	6.5	10.9	4.0
50 to 99 acres	9.3	11.8	2.4	7.4	8.4
100 to 179 acres	18.7	17.2	19.5	18.8	21.3
180 to 499 acres	50.5	45.1	64.7	53.3	49.6
500 or more acres	14.3	16.1	6.8	9.4	19.4
(total)	100.0	100.0	100.0	100.0	100.0

TABLE 13
Gross Farm Sales in 1992
By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Mean Gross Farm Sales	$96,512	$97,742	$108,961	$107,755	$78,245
Distribution of Respondents by Gross Sales Classes	(percent)	(percent)	(percent)	(percent)	(percent)
Less than $10000	18.2	16.5	14.5	22.0	17.5
$10,000 to $49,999	22.1	17.7	18.0	12.6	21.8
$50,000 to $99,999	22.1	21.3	25.3	19.5	29.8
$100,000 to $249,000	31.2	40.4	36.5	38.0	27.1
$250,000 or more	6.4	4.1	5.7	7.9	3.8
(total)	100.0	100.0	100.0	100.0	100.0

are above the average for the sample as a whole.

Enterprise Type. Some of the differences in the scale of new entrants' farms can be accounted for by the fact that new entrants appear to be far less likely than previous entry cohorts to take up dairying as the principal farm economic activity (see Table 14). Instead, recent entrants are much more likely than earlier entry cohorts to rely on beef or cash grains for the majority of their gross farm sales. Since dairy farms typically generate relatively high gross sales per acre, the seeming contradiction between larger acreage but lower average gross sales on the farms of recent entrants is consistent with a shift away from dairy farming toward less capital intensive forms of agriculture on the part of beginning farmers.

Characteristics of Recent Dairy Farm Entrants. Given that the percentage of dairy farmers among the recent entry cohort is smaller than for the total sample, it is interesting to examine whether the newer dairy farms differ substantially from those that have been in business for 5 or more years. Indeed, press accounts and popular wisdom suggest that to get into dairy farming in the 1990s, one must be prepared to build much larger facilities, milk more cows, and produce milk more efficiently than the average Wisconsin dairy farm.

The survey results shown in Table 15 below indicate that new dairy farm entrants differ from the average dairy farm in several ways. New dairy farmers are delaying the age at which they assume principal operator status (to 32 years old, somewhat earlier still than for non-dairy farmers), and are more likely than other dairy farmers to have had

TABLE 14
Percent of Respondents with Different Enterprise Types By Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Distribution of Respondents by Farm Enterprise Type					
Dairy	60.3	69.1	66.2	67.3	50.6
Beef	11.2	5.0	7.7	9.2	21.3
All other livestock	6.8	6.3	8.8	7.9	2.0
Cash grains	15.7	10.7	11.5	9.3	19.5
All other crops	6.0	8.9	5.9	6.3	6.6
(total)	100.0	100.0	100.0	100.0	100.0

other farm work experiences prior to becoming a principal operator. Moreover, new dairy farmers are slightly more likely than the average dairy farmer to have had access to the farmland assets of their parents. Still, just over half of new dairy entrants have ever acquired farmland from their own or their spouse's parents, and less than 60 percent of their owned farmland was acquired from relatives.

The results also suggest that young dairy farm entrants do not fit the image of "young mavericks"–highly capitalized operations using most of the latest technology on relatively large herds–so common in the media. Instead, the results suggest that recent dairy farm entrants have total farm assets and gross sales levels that are smaller than the average for all dairy farms in the sample. Although recent dairy farm entrants also have overall debt levels that are smaller than these of the average dairy farm in the sample, their debt-to-asset ratios are the highest of any of the entry cohorts.

Recent dairy entrants have smaller average herd sizes and average pounds of milk produced per cow than other dairy farms in the sample. While recent dairy farm entrants are more likely to utilize herd production record keeping services (like the Dairy Herd Improvement [DHI] program), reported DHI rolling herd averages[11] are also somewhat lower among recent entrants than for the rest of the dairy sample. While it is possible that recent entrants will eventually milk larger herds than did earlier cohorts, these data suggest that new dairy farmers are not *entering* the sector with substantially larger herds than continuing dairy farmers already have.

Tenure Status. Despite roughly equal access to their parents' "family farm" (discussed above), recent entrants owned a much smaller proportion of their farms than did the rest of the sample. The data in Table 16 are consistent with recent national-level research by Gale (1992) which found that rental land has been an important component of entry strategy over the last 10 to 15 years. Although over half of the acreage operated by

TABLE 15
Characteristics of Dairy Farms
By Recent Entry Cohorts

		Year First Became a Principal Operator			
	Overall Sample	1973-1977	1978-1982	1983-1987	1988-1992
Number in Sample	523	89	71	46	28
Percent of all dairy farms	100	17.0	13.6	8.8	5.4
Mean Age when first became a principal operator	27.0	26.8	27.3	27.4	31.8
Percent of operators with prior farm work experiences	57.1	43.8	65.8	61.8	84.6
Percent who have acquired any land from parents	55.5	42.1	51.7	45.6	53.9
Mean percent of owned land acquired from a relative	52.5	53.2	62.3	46.9	58.1
Mean Gross Farm Sales	$130,667	$116,815	$124,942	$142,023	$110,594
Mean Total Farm Assets	$426,980	$374,302	$348,092	$419,537	$356,976
Mean Total Farm Debts	$99,101	$103,376	$119,373	$125,301	$80,919
Mean Debt to Asset Ratio (percent)	25.8	30.9	33.7	34.6	35.9
Mean Herd Size (number of cows)	54.0	49.5	53.4	55.6	51.0
Mean pounds of milk per cow	14,834	14,863	14,621	16,345	13,453
DHIA participation rates (percent)	56	54	58	72	68
Mean DHIA average pounds of milk per cow	18,107	18,259	18,003	18,927	17,175

TABLE 16
1992 Tenure Status
By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Mean Percent of Acreage Operated that is Owned	76.9	73.4	73.4	62.9	57.0
Distribution of Respondents into Tenure Classes	(percent)	(percent)	(percent)	(percent)	(percent)
Full Owners	43.8	34.9	41.9	41.8	27.1
Owns Most Acres	39.0	46.0	38.7	26.8	29.1
Rents Most Acres	11.0	12.7	10.5	9.2	34.1
Full Tenants	3.1	6.5	8.9	22.3	9.8
(total)	100.0	100.0	100.0	100.0	100.0

NOTES: "Most Acres" refers to situations where the majority (but not all) of acres operated are either owned or rented.

recent entrants was owned by the operator in 1992, the average proportion of owned land was significantly lower than for the farm sample as a whole (57 percent versus 77 percent, respectively, of operated land).

The importance of rental land to recent entrants is underscored when respondent households are classified into one of four tenure classes. While 56 percent of all farm households rent some of the land they operate, 73 percent of recent entrants rent some of their acreage. Moreover, 44 percent of the recent entrants rented all or most of the land they operated, compared to only 17 percent in the entire sample.

Of course, rental land may be part of an entry strategy that is necessary in the face of high land costs and capital constraints facing young farmers today. Renting helps minimize risks in periods of uncertainty about trends in land markets and levels of net returns to farm assets. What is not immediately evident from the survey results is whether high rates of tenancy among recent entrants are any different from the rates for earlier entry cohorts when they were starting out.

Using age-specific data from the Census of Agriculture, Gale (1992) has argued that as each cohort ages, it tends to reduce their rental holdings and increase their owned acreage. This lifelong process of land accumulation peaks at some point, when the overall size of the typical farm tends to shrink as the operator moves towards retirement. What Gale fails to stress, and what is apparent in his reported figures, is the fact that each successive cohort appears to start out with a greater proportion of rented land than those that preceded them, and they tend to keep a larger proportion of rented

land in their portfolio at each stage of their life-cycle than those who came before.

In our sample of Wisconsin farmers, there is some evidence that the use of rental land can be an enduring strategy among certain entry cohorts. Those entering between 1973-1977, for example, are still less likely to be full owners in 1992 than those who entered in the ensuing decade. Entrants between 1983-1987 have a much higher rate of full tenancy than those coming before or after them. These results suggest that tenure patterns among Wisconsin entry cohorts do not follow the steady trajectories of increasing land ownership that are suggested by Gale's national data.

Keeping in mind that recent cohorts were less likely to own land than the average farmer in Wisconsin, the data in Table 17 suggest that the proportion of owned land that was purchased or inherited from relatives has fluctuated significantly from cohort to cohort over the last 20 years. The most recent entry cohort acquired 53 percent of their owned land from relatives, a number that is only marginally higher than average for Wisconsin farm operators. However, those who entered between 1973-1977 and 1983-1987 were much more likely to obtain owned land from unrelated people than those in other cohorts.

The information in the bottom half of Table 17 pertains to the rented land on respondents' farms. Specifically, the data reflect the average proportion of rented land that is owned by a relative of the operator. The results suggest that a greater percentage of recent entrants' rented land is rented from relatives than is the case in the rest of the sample. This is somewhat surprising when one recalls that these recent entrants rent a larger amount of land than do typical farm operators. A partial explanation might be that younger farm operators, and farmers in recent entry cohorts, are more likely to rent land that they will eventually inherit or purchase as their relatives retire and disburse their holdings.

Farm Balance Sheets. Farming over the last 30 years has become a much more highly capitalized industry. To a significant extent, this reflects rapid inflation in land prices during the 1970s and early 1980s. The value of farm machinery, trucks, and cars has also increased. Census of Agriculture data show that in nominal dollars, the average value of land and buildings on Wisconsin farms increased from $21,000 per farm in 1959 to over $210,000 in 1992, while the average value of machinery per farm increased from $11,000 in 1969 to $66,000 in 1992.

Because per farm nominal dollar figures do not reflect the influence of inflation, these data can obscure the real trends in capital investment and debt levels. In constant (1982) dollars, the average value of farmland and buildings per farm in Wisconsin rose steadily until it peaked in 1978, then declined in real terms through the 1982, 1987 and 1992 censuses. The mean value of farm machinery per farm also peaked in 1978, suggesting that fluctuations in the farm machinery market were influenced by similar economic trends as the agricultural land market. In both cases, there has been a noticeable and persistent decapitalization of agriculture in Wisconsin during the 1980s and early 1990s.

The data in Table 18 indicate that recent farm entrants have noticeably lower average farm asset values in almost every category than does the farm sample as a whole. While declines in farmland values reflect changes in the underlying land market--recall that recent entrants have slightly larger acreages than the average Wisconsin farmer--these declines should have affected all operators in the sample equally. Moreover, the lower values for machinery, cars, and trucks appear to reflect real choices by recent entrants to minimize capital investment. In part, lower average per farm machinery values may also reflect the fact

TABLE 17
Origins of Owned and Rented Farmland
By Recent Entry Cohorts

Origins of Owned and Rented Farmland on Wisconsin Farms	Overall Sample	Year First Became a Principal Operator 1973-1977	1978-1982	1983-1987	1988-1992
If Respondent Owned Any Land					
Mean percent of owned land that was inherited or gifted	5.8	4.4	9.7	6.8	9.0
Mean percent of owned land that was purchased from a relative	45.4	44.2	53.4	36.2	43.7
Mean percent of owned land that was purchased from a non-relative	48.5	51.4	36.9	57.1	47.3
(total)	99.7	100.0	100.0	100.1	100.0
If Respondent Rented Any Land					
Mean percent of rented land that is owned by a Relative	29.2	28.1	49.7	44.8	33.6
Mean percent of rented land that is owned by a Non-Relative	70.8	71.9	50.3	55.2	66.4
(total)	100.0	100.0	100.0	100.0	100.0

that fewer of the new entrants are becoming dairy farmers, a traditionally capital-intensive kind of farming.[12]

As was discussed in the context of land tenure above, it is possible that the lower total assets of recent entrants can be attributed to the fact that entrants are at the beginning of a cycle that will likely involve steady accumulation of assets throughout much of their careers (rather than being a sign that new entrants are making unusually low initial investments as compared to people who entered in previous periods). Again, the survey data do not offer direct evidence for either interpretation. But the fact that asset levels appear to be lower for entrants from 1973-1977 compared to entrants from 1978-1987 suggests that *the unusually high investment levels among entrants from the late-1970s and 1980s (relative to their predecessors) are not being sustained by the most recent farm entrants.*

Table 18 also reports data on debt levels for the farms of recent entrants and for the sample as a whole. Although the most recent entry cohort has significantly lower average debts per farm than cohorts that entered in the previous 15 years, their debt-to-asset ratios remain high because their asset levels are so much lower than other cohorts. Moreover, all of the four most recent entry cohorts maintain debt-to-asset levels that are well above the sample average, and fewer of them have been able to work their way

TABLE 18
Value of Farm Assets and Debts in 1992
By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Mean Value of Farm Assets in 1992					
Farmland and Buildings	$194,700	$149,400	$201,400	$129,000	$118,200
Farm Machinery, Cars and Trucks	$72,100	$61,600	$68,300	$77,300	$57,700
Crops and Feed on Hand	$19,800	$19,100	$21,000	$15,800	$12,000
Livestock Assets	$62,000	$55,700	$62,600	$67,400	$47,500
Other Farm Business Assets	$14,300	$10,000	$10,800	$17,300	$9,200
Mean Total Farm Assets	$362,900	$334,800	$371,100	$339,200	$286,600
Mean Total Farm Debts	$83,800	$98,300	$116,400	$103,700	$79,500
Mean Net Worth of Farm Enterprises	$279,000	$236,000	$253,400	$236,200	$207,100
Mean Debt/Asset Ratio (percent)	22.3	28.1	31.9	30.4	31.5
Distribution of Respondents by Debt/Asset Classes	(percent)	(percent)	(percent)	(percent)	(percent)
No Debts	32.7	21.5	10.3	17.1	21.9
Debts less than 10 percent of assets	10.9	6.6	8.3	9.5	9.8
Debts 10 to 39 percent of assets	32.8	41.1	44.2	38.6	30.5
Debts Exceed 40 percent of assets	23.7	30.8	37.2	34.8	37.9
(total)	100.1	100.0	100.0	100.0	100.0

NOTES: Dollar figures have been rounded off to make comparisons easier.
The sum of components may not add to the reported totals because of missing data. Totals reflect the mean values for cases where all components were reported.

completely out of debt. Whether these more highly leveraged farmers are simply on an earlier stage of a natural business lifecycle in which debt finances the early years of an operation--and in which the farmer typically gets rid of all debt before retiring and passing on the farm assets--or whether their relatively high debt levels reflect a fundamental change in the economics of farming cannot be readily ascertained from the data presented here.

Net Farm Income. High levels of capital investment and debt may be necessary to keep a farm economically competitive in the 1970s and 1980s, but they can also lead to cash flow problems during lean years that can threaten the viability of the farm business. One bottom line measure any farmer must pay attention to is the net farm cash income generated by the farming operation. Table 19 presents data on the 1992 net farm cash income of all farms and for recent entrants into farming.[13] The mean net farm income data on the first line suggest that those who entered since 1988 had average net incomes that were lower than earlier entrants and 25 percent lower than for the sample as a whole in 1992.

When the farms are disaggregated into various net farm income categories, it becomes apparent that roughly a quarter of the most recent entry cohort lost money in 1992, and another quarter earned net returns of less than $10,000. These numbers are higher than those seen in the sample as a whole, and particularly among those who entered between 1973-1987. Curiously, the percentage of recent entrants making over $40,000 per year in net farm cash income is roughly equal to the totals for other recent entry cohorts and the sample as a whole. This indicates that a significant portion of new entrants to farming in Wisconsin have been able to enter and prosper financially. There are fewer farms with very large (greater than $100,000) net farm cash incomes among the recent entrants than in the sample as a whole, which helps explain why the *mean* net farm income is lower for these farms.

The net cash income distributions evident in Table 19 suggest that new entrants are more likely than earlier entry cohorts to be polarized into one of two groups: those who make a decent household income from their farm on the one hand, and those who either lose money or make very little from their farm on the other. We would expect that the latter group would be more likely to drop out of farming in their first few years or will rely heavily on nonfarm earnings to pay household expenses.

Household Income from Farm and Nonfarm Sources. Although much of the survey dealt with farm enterprise level information, respondents were also asked about the share of the enterprise's total farm income, expenses, assets, and debts that belonged to their household.[14] Net farm income is one of several components that contribute to the total household income. The information in Table 20 summarizes the total 1992 income for households of survey respondents. Household income is decomposed into four main components: (a) household share of net farm cash income; (b) payments to household members for farm work; (c) wage, salary, or self-employment from work off the farm by all adult members of the household; and (d) unearned or passive income by all adult members of the household. The first two components are considered "farm income" and the latter two "nonfarm income."

The results suggest that 1992 farm income as a component of household income among recent entrants was dramatically lower than for farmers in earlier entry cohorts that were still farming in 1992. Indeed, among the most recent entrants the mean income from farming was actually less than the mean household income from off-farm sources (including both off-farm employment and passive income). While total household income was somewhat lower among recent entrants than for earlier entry cohorts, their income from nonfarm employment was higher on average than for the rest of the

TABLE 19
1992 Net Farm Cash Income
By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Mean Net Farm Cash Income in 1992	$ 26,082	$ 28,470	$ 23,730	$ 24,373	$ 19,543
Distribution of Respondents by Net Farm Cash Income Classes	(percent)	(percent)	(percent)	(percent)	(percent)
Lost Money	22.5	17.3	16.5	28.5	25.5
0 - $ 9,999	20.0	20.3	18.6	12.3	23.5
$ 10,000 - $ 19,999	11.0	8.9	18.5	6.3	8.0
$ 20,000 - $ 39,999	20.9	25.7	23.7	24.3	17.1
$ 40,000 - $ 59,999	10.9	13.5	13.0	14.3	13.9
$ 60,000 - $ 99,999	9.0	10.4	3.6	11.1	10.0
$ 100,000 or more	5.5	3.9	6.1	3.2	2.0
(total)	100.0	100.0	100.0	100.0	100.0

sample. Interestingly, about the same proportion of new entrant farm households depended on farm income for the majority of their household income as did the rest of the households in the sample (roughly 52 percent).

When the sample households are disaggregated into different total household income classes, it is clear that recent entrants do not differ significantly from the rest of the sample in terms of the proportion of households in each income bracket. This is somewhat surprising given the fact that recent entrants tend to represent households early in their family life cycles. The only real exception is the fact that none of the most recent entrants has a total household income exceeding $100,000. To a considerable degree, the results suggest that off-farm employment has enabled recent entrants to maintain a standard of living that meets or exceeds that of the rest of the farm sample despite lower net farm returns.

Labor Allocation. The survey gathered extensive information about the farm-enterprise labor contributions of the farm operator, all adult members of the operator's household, and any hired nonhousehold workers. Moreover, detailed questions examined the amount and type of off-farm employment by all members of the respondent's household. This section presents some summary measures of this information and compares the labor allocation patterns of recent entrants to those on the typical Wisconsin farm.

TABLE 20
Components of 1992 Household Income
By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Mean household share of net farm cash income	$ 22,800	$ 26,400	$ 21,500	$ 21,900	$ 15,000
Mean payments to household members for farm work	$ 3,400	$ 4,000	$ 5,100	$ 1,900	$ 1,800
Mean Total Household Income From Farming	**$ 26,200**	**$ 30,400**	**$ 26,600**	**$ 23,800**	**$ 16,800**
Mean off-farm employment income by hh members	$ 14,500	$ 17,000	$ 14,100	$ 14,700	$ 18,400
Mean unearned nonfarm income by hh members	$ 5,300	$ 3,700	$ 5,600	$ 1,700	$ 2,800
Mean Total Income From Nonfarm Sources	**$ 19,800**	**$ 20,700**	**$ 19,700**	**$ 16,400**	**$ 21,200**
Mean Total Household Income	**$ 45,900**	**$ 51,000**	**$ 46,200**	**$ 40,000**	**$ 38,000**
Percent of Households Where Farm Income Exceeds Nonfarm Income	51.8	57.8	55.0	62.7	52.0
Distribution of Respondents Into Household Income Classes	(percent)	(percent)	(percent)	(percent)	(percent)
Less than zero	3.3	3.0	3.2	4.8	4.0
$ 1 - $ 29,999	33.6	24.1	22.7	36.4	37.6
$ 30,000 - $ 49,999	28.0	24.1	44.7	34.0	18.9
$ 50,000 - $ 99,999	26.9	41.2	21.2	18.5	37.4
$ 100,000 or more	8.2	7.6	8.3	6.3	2.0
(total)	100.0	100.0	100.0	100.0	100.0

NOTE: Dollar figures have been rounded off to make comparisons easier.
The sum of components may not add to the reported totals because of missing data. Totals reflect the mean values for cases where all components were reported.

One can think of labor allocation at three levels of analysis: at the level of the farm enterprise, at the level of the farm operator's household, and at the level of the farm operators themselves. The data in Table 21 and Table 22 reflect an attempt to categorize respondents at the enterprise and household levels.

Farm enterprises were initially dichotomized depending upon whether household members (the farm operator and all other adults in the household) provided the majority of the labor on the farm. Enterprises where the majority of labor came from outside the respondent's household are called "hired labor farms." The remaining farms were then divided into two subgroups: (1) farms where some non-household labor is hired, though the majority is provided by household members; and (2) farms where no labor is hired from outside the household (see Table 21).

The results suggest that the vast majority of farm enterprises (over 90 percent of the entire sample) were "family labor farms." Only 5 percent of all farms relied principally on the labor of hired, non-household members, and sixty percent of all respondents reported hiring no labor from outside their household. Recent entrants were less likely to hire any non-household labor, and were less than half as likely to be running "hired labor" enterprises where the majority of labor comes from outside the respondent's household.

When we look at labor allocation within the household, it is again possible to identify three distinct groups: (1) farm households in which no one works off-farm; (2) farm households in which hours of farm labor exceed hours of nonfarm labor; and (3) farm households in which hours of nonfarm work are greater than hours of work on the farm. The results in Table 22 indicate that 68 percent of households in the recent entry cohort have at least one person working off the farm. Moreover, a larger fraction of the newest entry cohort farm households do *principally* nonfarm work than do the households of earlier entry cohorts.

Finally, most of the literature on nonfarm employment by farmers addresses the degree to which farm operators themselves participate in nonfarm labor markets. Indeed, while the evidence just presented suggests that nonfarm work by all household members is increasingly significant, the data in Table 23 indicate that farm operators who entered between 1988-1992 are also more likely to have off-farm work themselves in 1992 than is the average farm operator in Wisconsin.

The traditional definition of off-farm employment among farm operators (used by the Census of Agriculture and replicated by many researchers) dichotomizes farm operators into two groups solely on the basis of the number of days of off-farm employment they have each year. In other words, regardless of the amount of *farming* they do, they are called either "full-time" or "part-time" operators. Table 23 reports data on the labor allocation decisions of farm operators based on this traditional definition, as well as on a more detailed "revised" classification system.

When looked at only in terms of whether or not a farm operator works at an off-farm job more than 800 hours per year, it appears that less than a quarter of the respondents in the entire sample were "part-time" farmers. In addition, farm operators who entered in the last 10 years are more likely to have significant off-farm work commitments than the rest of the sample.

Since a commitment to off-farm employment may not necessarily signal a decline in farm work commitments, the revised definition in the bottom half of Table 23 categorizes farmers according to *both* the hours of farm work and the hours of off-farm work they do each year. In particular, the farmers who have no off-farm employment

TABLE 21
1992 Labor Classification Codes for Farm Enterprise By Recent Entry Cohorts

		Year First Became a Principal Operator			
	Overall Sample	1973-1977	1978-1982	1983-1987	1988-1992
Distribution of Respondents by Farm Enterprise Labor Type	(percent)	(percent)	(percent)	(percent)	(percent)
Uses Principally Non-Household Hired Labor	5.2	5.6	5.7	4.8	2.0
Uses Some Non-Household Hired Labor	36.5	38.1	42.9	32.5	32.9
Uses No Non-Household Hired Labor	58.3	56.3	51.5	62.7	65.1
(total)	100.0	100.0	100.0	100.0	100.0

TABLE 22
1992 Labor Classification Codes for Farm Household By Recent Entry Cohorts

		Year First Became a Principal Operator			
	Overall Sample	1973-1977	1978-1982	1983-1987	1988-1992
Distribution of Respondents by Household Labor Type	(percent)	(percent)	(percent)	(percent)	(percent)
No off-farm work by adult household members	35.3	28.4	24.1	33.8	32.2
Adult household members engaged principally in farm work	44.8	49.5	56.9	44.0	36.7
Adult household members engaged principally in off-farm work	20.0	22.0	19.0	22.2	31.1
(total)	100.0	99.9	100.0	100.0	100.0

TABLE 23
Operator Labor Force Participation
By Recent Entry Cohorts

		Year First Became a Principal Operator			
	Overall Sample	1973-1977	1978-1982	1983-1987	1988-1992
Distribution of Respondents Into Traditional Categories of Full-Time and Part-Time Farming	(percent)	(percent)	(percent)	(percent)	(percent)
Full-Time Farmer *(Less than 800 hours off-farm work per year)*	77.1	76.1	79.5	70.7	62.9
Part-Time Farmer *(More than 800 hours off-farm work per year)*	22.9	23.9	19.5	29.3	37.1
(total)	100.0	100.0	100.0	100.0	100.0
Distribution of Respondents Into Revised Categories of Full-Time and Part-Time Farming					
Full-Time Farmer *(No off-farm work)*	66.8	66.6	65.9	64.2	54.2
Principally Farmer *(More than 1500 hours on farm, less than 800 hours off-farm)*	8.4	7.1	10.5	6.5	7.8
Dual Employment Farmer *(More than 1500 hours on-farm, more than 800 hours off-farm)*	11.6	12.1	12.6	9.4	15.8
Part-Time Farmer *(Less than 1500 hours on-farm, more than 800 hours off-farm)*	11.3	11.8	7.9	19.9	21.3
Underemployed/ Retirement Farmer *(Less than 1500 hours on-farm, less than 800 hours off-farm)*	1.9	2.3	3.2	0.0	0.0
(total)	100.0	99.9	100.1	100.0	99.9

are referred to as "full-time farmers." Those with some off-farm work are broken down into four categories depending upon whether or not they work more than 800 hours at an off-farm job, and whether or not they work more than 1500 hours per year on the farm.

Using this revised definition, it is apparent that almost half (46%) of all farm operators who entered in the last 5 years have some off-farm employment. Moreover, most of the increase in participation in off-farm work involves relatively full-time (greater than 800 hours a year) commitments to the off-farm job. While the proportion of farmers with some off-farm work has increased with each successive entry cohort in the last 20 years, the proportion of "principally farming" individuals--who work a full schedule on the farm and only part-time off the farm--has remained fairly constant.

The most dramatic differences between the operators in the most recent entry cohort and the rest of the farm operators in the sample lie in two types of workforce participation: operators with both full-time farm *and* full-time nonfarm jobs (dual employment); and operators with significant off-farm work but a less than full-time farm commitment (part-time farmers). A significantly larger proportion of recent entrants are dual-employment and part-time farmers than are the other entry cohorts.

Labor Force Participation on Dairy Farms. Because of the unusual labor demands of dairy farming, separate analyses were done for farm and off-farm labor force participation among the dairy farm entrants in our sample. The data in Table 24 suggest that, unlike the previously reported results for all farms, new dairy farm operators were significantly *less* likely to have an off-farm job than were other dairy farmers. Moreover, new dairy farm households were less likely to have anyone working at an off-farm job and spent less total hours on nonfarm work than the average dairy farm household.

The lower level of off-farm work among recent dairy farm entrants is reflected in their lower average level of off-farm earnings. New dairy farmers had lower average off-farm earnings than other dairy farmers, despite the fact that they had net farm earnings that were also lower than average.

Summary and Conclusions

Although there has been a growing interest in public policy circles about programs aimed at assisting "beginning farmers," there has been relatively little research into the characteristics and needs of recent farm entrants. Using the results of an extensive cross-sectional survey of Wisconsin farm operators, it is possible to characterize the "typical" entry process for Wisconsin farm operators, and to examine how that process might have changed in recent years. In addition, the results suggest some important ways that recent entrants differ from the average Wisconsin farmer. Many of these differences are reflected in the overall trends in farm structure in Wisconsin.

Farm Background and Work Experience

Overall, it is apparent that most Wisconsin farm operators come from a farm background and start farming at a fairly young age. This is particularly true for dairy farm entrants. The first farming experience typically comes around the age of 23, after school is finished and other possible career options explored. Interestingly, the results suggest that the average age for this first farming experience has not changed much over the last 15 to 20 years.

It is common for many Wisconsin farm operators to wait several years after their first farm work jobs before becoming a principal farm operator. Across the sample as a whole, the average age when a farm operator becomes the "principal operator"

TABLE 24
Off-farm Labor Force Participation of Dairy Farmers By Recent Entry Cohorts

	Overall Sample	Year First Became a Principal Operator			
		1973-1977	1978-1982	1983-1987	1988-1992
Mean Hours per Week by Farm Operator Spent Doing					
Farm work	74.2	74.0	77.0	79.3	79.8
Off-Farm Jobs	3.5	4.1	2.3	2.9	3.6
Mean Hours per Week by All Household Members Spent Doing					
Farm work	114.1	112.8	105.9	109.4	99.8
Off-Farm Jobs	21.1	21.1	24.6	16.9	16.4
Percent of Operators with Any Off-Farm Job	17.4	16.4	15.9	16.1	15.4
Percent of Households with at least one person working at an off-farm job	59.5	65.8	70.0	57.3	51.6
Mean Total Household Farm Income	$40,200	$40,300	$41,000	$36,900	$29,200
Mean Total Household Nonfarm Income	$12,900	$13,000	$12,000	$ 8,300	$ 8,600
Mean Total Household Income	$53,000	$53,500	$53,000	$44,700	$37,700

NOTES: Dollar figures have been rounded off to make comparisons easier.
The sum of components may not add to the reported totals because of missing data. Totals reflect the mean values for cases where all components were reported.

(the strict definition of "entry" used here) is 28 years of age, roughly 5 years after starting farming in some capacity. One of the most striking findings of the current study is that farm entrants between 1988 to 1992 are delaying their assumption of principal operator status for 10 years after their first farm work experience, more than twice as long on average compared with earlier entry cohorts.

The delay in taking over principal operator responsibilities is consistent with (and compounds the effects of) evidence that the overall rate of entry has slowed in recent years (Gale and Henderson, 1991). In fact, delayed entry for the most recent entry cohort has been significant enough such that entrants between 1988-1992 are currently about the same age as those who entered in the previous 5-year period.

The results also confirm that principal operators of Wisconsin farms rarely worked their way up an "agricultural ladder" on which full tenancy and hired labor on an unrelated person's farm were important rungs. While there is some evidence for a gradual process of stepwise accumulation of assets and managerial authority for many Wisconsin farm operators, in fact almost half of principal operators entered farming directly in that role with no prior farm work employment. Most of the rest worked for relatives (typically on their parents' farm) during the years preceding their having become a principal operator. Recent entrants, in particular, were more likely to have spent time as junior operators on a multi-operator operation than was any earlier cohort.

Importance of Family Farm Resources

Roughly 90 percent of farm operators, and the majority of their spouses, came from families that farmed when they were young. Virtually all dairy farmers came from farm backgrounds. There was no evidence that this has changed much in recent years. In fact, all of the dairy farm entrant couples between 1988-1992 had either an operator or a spouse from a farm background. It is clear that there are few individuals from nonfarm backgrounds who have successfully entered dairy farming in Wisconsin.

This fact suggests that family connections are essential for entering farming. However, it is not clear exactly how a farm background contributes to success in farming. Obviously, a farm background provides direct personal experience, farming skills and know-how, and an intangible level of comfort and familiarity with running a farm business and living a farming lifestyle. Relatives who farm are valuable sources of assistance and guidance during the early years of a new farm enterprise. Farming parents may also provide important material resources that are less available to those from nonfarm backgrounds. These include privileged access to family farm assets, perhaps at below market rates and more flexible terms of transfer; the possibility of direct financial assistance or collateral guarantees to enable young farmers to obtain credit and assets to start a new farm; direct contributions of labor to help out on the new farm; and the possibility of expanding existing farm operations into joint farm business enterprises encompassing more than one generation.

While the survey results do not speak to many of these presumed benefits of farm backgrounds, it is clear that the direct transfer of a particular farm between generations has occurred for only about half of Wisconsin farm operators, and for less than half of the new entrants. While this is not an insignificant figure, it is apparent that there are many cases in which farm operators are able to enter farming without taking over their family farms.

Moreover, only about half of the owned land on Wisconsin farms was originally acquired from a relative, and a very small percentage of that was the result of a direct inheritance or gift. Similarly, the vast majority of rental land is rented from an

unrelated person in Wisconsin, though in recent years a greater share has been rented from relatives.

Characteristics of Recent Entrants

Although Wisconsin witnessed very rapid growth in farm scale, capitalization, and gross farm sales from the end of World War II through the late 1970s, the most recent census data suggest that there has been a serious decline in most aggregate measures of the economic importance of agriculture in the State through the 1980s and into the 1990s. Once adjustments are made for inflation, it is very apparent that for the last 10 to 12 years, increases in farm production are no longer compensating for declining farm numbers. The characteristics of recent entrants are consistent with that trend.

Taken as a whole, the farm enterprise characteristics of new entrants suggest that the importance of dairying in Wisconsin is likely to continue to decline. For whatever reasons, a smaller proportion of the entrants in the most recent cohort than those in earlier cohorts are milking dairy cows for a living. The fact that recent entrants tend to have larger acreages, smaller gross sales, and fewer farm assets is partly an reflection of the diminished importance of dairying. Even among the dairy farm entrants, however, few of the new entrants are entering with larger or more productive herds than average, suggesting that any evolution toward large-scale capital-intensive dairying is likely to occur primarily through the transformation of existing farms, rather than through the wholesale entry of newer, larger operations.

These trends run counter to the image that the future of Wisconsin agriculture lies only in an "industrialized farm-model" involving rapidly expanding scale, higher levels of capital investment, and fewer traditional family-run operations. Recent entrants are, in most respects, getting in the old-fashioned way--by keeping their investments and debt loads under control and operating at a modest scale until they "get their feet on the ground." The relatively low levels of investment typical of new entrants in our sample suggest that there might be successful entry strategies that will allow new family-scale operations to survive and prosper. On the other hand, most alternatives to dairying are unlikely to generate the gross economic activity (either in terms of sales, expenses, or profits) that were traditionally associated with family-scale dairy farming in Wisconsin.

The evidence shows how recent entrants are likely to have significantly lower farmland and machinery assets than the average farm in the sample. The decline in farmland assets is mostly attributable to a general decline in land values in Wisconsin during the 1980s, while the decline in machinery and equipment values reflects a real downsizing in the capital intensity of Wisconsin agriculture. Interestingly, although debt levels are also somewhat lower for recent entrants, their average debt-to-asset ratios remain at the relatively high levels of their better capitalized colleagues who entered between 1978-1988, and well above those in the sample as a whole.

Recent entrants appear to be continuing the trend towards increased use of rented--as opposed to owned--land in their operations. As with farm balance sheets, the argument can be made that young farmers can be expected to rent more land in earlier phases of their lifecycle, but that they will eventually accumulate assets and purchase more of their farmland as they get older. While it is difficult to be certain how much of the heightened level of tenancy among entrants is merely a life-cycle phenomenon, the survey results suggest that higher rates of tenancy and indebtedness are persisting even for people who entered 15 to 20 years earlier.

Given the inevitable costs of starting up a farm operation, it is not surprising that new entrants have significantly lower net farm incomes than the average farm in the

sample. However, what is surprising is the fact that just as many new entrants made more than $40,000 net farm income in 1992 as those who entered before them. It is only because there were fewer new entrants making between $10,000 to $40,000, and more new entrants making less than $10,000 that the average net farm income of the most recent entry cohort appears to be lower than in the sample as a whole.

Indeed, once off-farm labor and earnings are taken into account, new farm entrants do not appear to make significantly less total household income--on average--than most other farmers. Where they differ is in the level of participation in off-farm employment. New farm operators and adult members of their households are significantly more involved in off-farm work than their counterparts. Almost half of recent farm operators work off-farm (compared to one-third of all farmers), and most of this increase is the result of a higher proportion with full-time jobs off the farm. Collectively, the members of new farm households are more likely to work more hours off the farm than on the farm. These findings reflect the continuation of a long-term trend towards off-farm work subsidizing low net farm returns.

Although off-farm employment appears to be a significant survival tool for many new farm entrants in Wisconsin, the increased dependence on nonfarm earnings to support farm households is a double-edged sword. On the one hand, it makes it possible for family farmers to reduce the net farm returns they need to keep the farm going, and increases their ability to compete with larger-scale industrial farms elsewhere in the country. Yet at the same time, attempts to keep a full-time farm going while maintaining significant off-farm employment can lead to heightened levels of family stress, and can minimize the intangible benefits of a farming lifestyle.

Implications for Public Policy

Although most farm entrants come from farm backgrounds, these results suggest that any beginning farmer program will need to recognize the significance of farm transfers between both related and unrelated parties. The needs of the buyers and sellers in each case can be quite different, and resources appropriate to the one may be inappropriate to the other.

It is frequently suggested that rates of entry into farming have declined as the capital requirements necessary to succeed in farming have risen. Because of these supposed "capital barriers," a central thrust of programs to assist beginning farmers has been to make credit available at subsidized interest rates. The evidence from Wisconsin indicates that the capital investment of entrants in the mid- to late-1980s has not been unusually high; in fact, it appears that the initial capital investment levels may have actually declined among recent entrants, even among dairy farmers.

It appears that new entrants into farming in Wisconsin are doing so with no more (and perhaps less) capital to invest than was required in years past. Moreover, since interest rates have been significantly lower in the latter half of the 1980s compared to the late 1970s or early 1980s, access to capital or credit may not be as significant in discouraging entry as previously thought. To the extent that new entrants have found profitable ways to get established in farming without high levels of capital investment, their experiences could serve as models for future entry programs.

The survey data and secondary evidence suggest that the 1980s and early 1990s were periods of historically low gross and net returns to Wisconsin's farmers. The overall decline in entry rates may reflect the fact that low overall returns to farm assets make even smaller investments economically questionable. It may well be that interest

rates on farm capital (although low by recent historical standards) are still too high compared to the cash flow that farmland and machinery investments can be expected to generate.

Hence, attempts to make financing more attractive to young farmers (through subsidized beginning farmer loan programs, for example) might help increase the rate of entry. Even more so, any public or private efforts which increase the profitability of farming will encourage entry into the sector.

The growing significance of off-farm employment suggests that rural development efforts must recognize the need for a diversified employment base in traditionally agricultural areas. While many have linked the health of rural communities to the prosperity of farming, it is increasingly the case that the health of farming has become more dependent upon the health of rural nonfarm economies.

Endnotes

[1]This is a revised version of a paper originally presented at the 1994 Annual Meeting of the Rural Sociological Society, Portland, Oregon, August 11-14.

[2]The author is a doctoral candidate in the Department of Rural Sociology and assistant researcher for the Agricultural Technology and Family Farm Institute at the University of Wisconsin-Madison. The research project that this paper is a part of was a joint effort of many people, including Janet Eisenhauer, Susan Bentley, William Saupe, and Brad Barham. The paper benefited from comments and suggestions by Brad Barham, Sharon Lezberg, Steve Stevenson, Jess Gilbert, and Fred Buttel. Final responsibility for interpretations of data and conclusions, however, lie solely with the author. Financial support for conducting and analyzing these data was received from the Research Division of the College of Agricultural and Life Sciences, UW-Madison; the Economic Research Service, USDA; and the Cooperative Extension Service, University of Wisconsin-Extension.

[3]The survey is usually referred to as the 1993 ATFFI Family Farm Survey. For a more comprehensive discussion of the results, see Barham et al. (1994).

[4]In fact, rates of net decline appear to have returned to high levels similar to those prevailing in the late 1950s and 1960s.

[5]Because questions used to calculate entry rates were not asked in earlier versions of the Census of Agriculture, it is difficult to estimate entry rates prior to 1978.

[6]Survey results indicate that our sample included more commercial scale farms (gross farm sales exceeding $25,000) than the population of farm operators included in the 1992 Agricultural Census. This is further reflected in the fact that roughly 60 percent of our sample received the majority of their gross farm income from the sale of dairy products, as compared to 40 percent in the 1992 Agricultural Census. Interpretation and generalization of the findings should take this sample bias into account.

[7]Taken from the 1992 Census of Agriculture.

[8]In fact, 7 of the 873 respondents reported that they had not achieved principal operator status. In each case, the respondent currently worked as a junior operator in a family partnership or corporation. Moreover, missing data led to an inability to code the date of entry for another 13 cases in the sample. Therefore, the analysis below is limited to the 853 cases (98 percent of the sample) where the date of the earliest principal operator status could be determined.

[9]Recall that the questions on first farm experience defined it as "the farm you were

on when you first tried to support yourself at least in part through farming, and on which you made farm management decisions."

[10]In fact, the growth in sales per farm in inflation-adjusted constant dollars peaked in 1982 and then declined 10 percent between 1982-1992 in real terms. In nominal dollars, the gross sales per farm increased steadily by over 900 percent from 1959-1992.

[11]The reported DHI average reflects an average across all farms enrolled in the DHI program within each subsample.

[12]Recall, however, that the results in Table 11 revealed that even among only dairy farms, new entrants tended to have fewer total farm assets.

[13]Of course, snapshots of net farm income in a single year may not reflect the considerable year-to-year variations in net income on any given farm and in the farm sector in general. However, they do provide a reasonable comparative measure of the performance of one group relative to another over the same period of time.

[14]Because more than one household may be involved in any given farm operation--particularly with partnerships and corporations--the household share may be only a fraction of the total enterprise income, expenses, assets, or debts. For most farm households in the survey, however, household shares were 100 percent of the totals.

References

Agricultural Technology and Family Farm Institute. 1993. *In Their Own Words: A Summary of the 1992-1993 ATFFI Farmer Meetings*. Madison: ATFFI, University of Wisconsin-Madison.

Barham, B., S. Bentley, F. H. Buttel, J. Eisenhauer, D. B. Jackson-Smith, and W. E. Saupe. 1994. "The 1993 ATFFI Family Farm Survey." Special Edition of the *Status of Wisconsin Farming*, August.

Barham, Bradford, and Spencer D. Wood. 1994. *1994 Wisconsin Dairy Farmer Poll: Summary Report.* ATFFI Research Paper No. 4, Agricultural Technology and Family Farm Institute, University of Wisconsin-Madison, July.

Bureau of the Census. 1994. *1992 Census of Agriculture, Volume 1: Geographic Area Series, Part 49: Wisconsin State and County Data.* AC92-A-49, U.S. Department of Commerce, Washington.

Buttel, Frederick H. and Pierre LaRamee. 1991. "The 'Disappearing Middle': A Sociological Perspective," pp. 151-169 in *Towards a New Political Economy of Agriculture.* W. H. Friedland et al (eds.), Westview: Boulder.

Clemenson, Heather A., and Jean B. Down. 1986. "Who are the New Farmers?," pp. 219-240 in *Farming and the Rural Community in Ontario.* Foundation for Rural Living: Toronto.

Cross, John. 1992a. Personal communication, letter to Mr. Dick Rodefeld, April 7.

_____. 1992b. "Spatial patterns of Change in Wisconsin Dairy Farming." Unpublished paper presented at 88th Annual Meeting of the Association of American Geographers, San Diego, April 18-21.

_____. 1992c. "Change in America's Dairyland: Wisconsin's Declining Number of Dairy Farms." Unpublished paper presented at 27th International Geographical Congress, Washington, D.C., August 9-14.

_____. 1994. "Entry and Exit Behavior of Wisconsin Dairy Farmers." ATFFI Research Paper No. 6, Agricultural

Technology and Family Farm Institute, University of Wisconsin-Madison, August.

Ehrensaft, Phillip, Pierre LaRamee, Ray D. Bollman, and Frederick H. Buttel. 1985. *The Microdynamics of Farm Structural Change in North America: The Canadian Experience and Canada-U.S.A. Comparisons.* Cornell Rural Sociology Bulletin No. 142, Cornell University, March.

Gale, Fred. 1992. "How young farmers accumulate farmland," *Agricultural Income and Finance: Situation and Outlook Report.* AFO-46 (September): 30-33, USDA-ERS.

_____. 1993. "Why did the number of young farm entrants decline?," *American Journal of Agricultural Economics,* 75(February): 138-146.

_____. 1994a. *The New Generation of American Farmers: Farm Entry and Exit Prospects for the 1990s,* USDA-ERS, AER (forthcoming).

_____. 1994b. Personal communication, June 16th, 1994.

Gale, Fred and David Henderson. 1991. *Estimating Entry and Exit of U.S. Farms, 1978-1987.* USDA-ERS, Staff Report AGES9119.

General Accounting Office. 1993. *Farm Finance: Numbers of New Farmers is Declining.* GAO/RCED-93-95 (May).

Kloppenburg, Jack R. Jr., and Charles C. Geisler. 1985. "The Agricultural Ladder: Agrarian Ideology and the Changing Structure of U.S. Agriculture." *Journal of Rural Studies* 1(1):59-72.

Lancelle, Mark, and Richard D. Rodefeld. 1980. "The influence of social origins on the ability to attain ownership of large farms." *Rural Sociology* 45:381-395.

LaRamee, Pierre. 1989. *The Agrarian Transition in Advanced Capitalist Social Formations.* Unpublished Ph.D. thesis, Cornell University, Ithaca.

Lezberg, Sharon. 1994a. *Summary of the ATFFI Entry-Exit Focus Group Meetings: Report to the Entry/Exit Coalition.* ATFFI Research Paper No. 5, Agricultural Technology and Family Farm Institute, University of Wisconsin-Madison, July.

_____. 1994b. *Summary of the ATFFI Entry-Exit Focus Group Meetings: Strategies for Beginning and Retiring Dairy Farmers.* ATFFI Research Paper No. 8, Agricultural Technology and Family Farm Institute Research Report, August.

Lyson, Thomas A. 1984. "Pathways into Production Agriculture: The Structuring of Farm Recruitment in the United States." *Research in Rural Sociology and Development,* 1:79-103.

Tweeten, Luther and Carl Zulauf. 1994. "Is farm operator succession a problem?" *Choices* (Second Quarter): 33-35.

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